Environmental and Social Management Plan

of

Construction of Parking Yard, Inspection Shed, Warehouse in Existing Biratnagar ICP (Contract ID No.: SRCTIP/NITDB/W/NCB-02/2081-82)

(Biratnagar Metropolitan City, Ward 18, Morang, Koshi Province)

Nepal Intermodal Transport Development Board
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ACRONYMS

BES	Brief Environmental Study
BMC	Biratnagar Metropolitan City
BoQ	Bill of Quantity
CHESMP	Contractor's Health, Environmnetal and Social Management Plan
CSC	Construction Supervision Consultant
DIA	Direct Impact Area
DoI	Department of Industry
DPR	Detail Project Report
EHS	Environment, Health and Safety
EPA	Environment Protection Act
EPR	Environment Protection Rule
ERMC	Environment and Resource Management Centre
ESE	Environmental and Social Expert
ESF	Environment and Social Framework
ESMF	Environmental and Social Management Framewotk
ESSR	Environmnetal and Social Screening Report
ESMP	Environmental and Social Management Plan
ESSs	Environmental and Social Standards
GBV	Gender Based Violence
GoN	Government of Nepal
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HH	Household
ICP	Integrated Check Post
IIA	Indirect Impact Area
LMP	Labour Management Procedure
MoICS	Ministry of Industry Commerce and Supplies
MSDS	Material Safety Data Sheets
NAAQS	National Ambient Air Quality Standard
NITDB	Nepal Intermodal Transport Development Board
NPHC	National Population and Housing Census
OHS	Occupational Healtha and Safety
PCO	Project Coordination Office
PPE	Personal Protective Equipment
SEA/SH	Sexual Exploitation and Abuse/Sexual Harrashment
SRCTIP	Strategic Road Connectivity and Trade Improveent Project
STD/STI	Sexually Transmitted Disease/ Sexually Transmitted Infection
WB	World Bank

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1 INTRODUCTION

1.1 Project Background

The World Bank will be supporting the Ministry of Physical Infrastructure and Transport (MoPIT) and the Ministry of Industry, Commerce and Supplies (MoICS) implementing agency in implementing the Strategic Road Connectivity and Trade Improvement Project (SRCTIP). The objective of the project is to improve the efficiency and safety of select transport infrastructure, improve the efficiency of cross-border trade, and strengthen capacity for Strategic Road Network management in Nepal.

The Government of Nepal has established Nepal Intermodal Transport Development Board (NITDB) under the Development Board Act 1956 A.D. under Ministry of Industry, Commerce and Supplies (MoICS) to regulate and manage the cross-border infrastructures such as ICDs, Dry Ports, Container Freight Stations (CFSs), Integrated Check Posts (ICPs), Collection and Distribution Centers. The Biratnagar ICP is one of the seven existing border cross points in Nepal (India-Nepal Boarder-5 and China-Nepal Boarder-2). The current infrastructure was built in 2020 and started its full-fledged operation since February 2020. The Biratnagar ICP consist of buildings (administrative, customs, quarantine, entrance gates, dormitory, security, watch tower etc.), two warehouses, a 1520 m^2 on the import side and 740 m^2 in export side, one animal shed, and two process sheds, 2 weighing bridges, parking yard for 250 vehicles and container yard for 200 boxes. Wastewater treatment plant of 50 KLD capacity also exists in the existing ICD. There are also ffirefighting systems including pumps (5 Nos) water storage, supply lines, and hydrants. The area of Biratnagar ICP is 87 hectares. The flow of container freight (CF) interms of number and frequency is increasing each day in Biratnagar ICP. In absence of adequate parking lots, these CFs are parked along roads connecting to different facilities inside ICPs and in the access road. As a consequences there have been delay and access limitation for freights bound for different clearances facilities within ICP. The parked CFs along access roads have created difficulty for road traffic. The NITDB has proposed to construct/extend the parking yard, warehouse and inspection shed inside the ICP premises availed through SRCTIP. The construction of the facilities (hereafter referred to as "the project") will bring efficiency of ICP operation, solve existing traffice problems in the ICP gate and help to timely address in-bound and out-bound CFs for smooth operation.

1.2 Rational and Scope of the ESMP

The Environmental and Social Management Plan (ESMP) sets out how the environmental and social risks and impacts will be managed for the additional facilities through the different phases of construction i.e., planning and design, construction, operations and decommissioning in response to the construction of parking yard, inspection shed and warehouse in ICP. The ESMP includes several matrices identifying key risks and setting out E&S mitigation measures. It also includes key elements relevant to the delivery of the E&S management measures, such as institutional/ implementation arrangements, plans for capacity building and training and budget. The ESMP follows the World Bank Environmental and Social Framework (ESF) as well as the Brief Environmental Study (BES) mandated by GoN requirement. The issues and risks identified in the matrix are based on current detailed design and environmental and social

information of the site. The WBG EHS Guidelines and stakeholder consultation further informed the choice of mitigation measures. The ESMP identifies other specific E&S management tools/instruments, such as the Stakeholder Engagement Plan (SEP), Labor management procedures (LMP), SEA/SH Action Plan, that should be referenced in conjunction.

1.3 Salient Features of the Project

The salient features of the proposal are provided in following Table 1-1.

Table 1-1: Salient Features of the project

General	
Proponent	Ministry of Industry, Commerce and Supplies
Project Name	Strategic Road Connectivity and Trade Improvement Project (SRCTIP)
Type of Proposed Project	Civil Infrastructure, (warehouse, inspection shed, parking yard)
Province	Koshi Province
District	Morang
Municipality	Biratnagar Metropolitan City
Project Affected Ward	Ward 18 of Biratnagar Metropolitan City
Elevation Range	61 m AMSL
ICP Infrastructures (Built Up Area)	
Built up area	42040 Sq. m.
Land ownership	Government
Additional facilities proposed in the existing ICP, Biratnagar	
Parking Area	31,530 Sq. m.
Warehouse Area	2000 Sq. m.
Inspection Shed Area	200 Sq. m.
Toilet/Bathroom	1 number
Financial Indicators	
Total Project Cost	NPR 679994063.91
Construction Period	18 months after preparatory work/contract

Source: Detail Project Report, 2081

1.3.1 Location, Type and Scale of Facilities

The project area is located in ward 18 of Biratnagar Metropolitan City (BMC) of Morang District, Koshi Province of Eastern Nepal. Biratnagar is known as the industrial capital of Nepal. Biratnagar ICP is located near to Nepal-India Boarder and is also adjacent to the Indian counterpart Jogbani ICP in the Indian state of Bihar. Besides its industrial and commercial significance, the city has its own historical and cultural significance. Biratnagar is easily accessible via road and air. The road distance to Biratnagar from Kathmandu is about 370 Km and 35 minutes flight time to Biratnagar airport. The existing ICP is 15 Km southeast from Biratnagar airport, 10 Km southeast from the Biratnagar Bazar and 4.5 Km north from Hanuman Chowk of Koshi Highway.

The Location of the Project Area is provided below.

Figure 1.1: Project Location in Nepal (Source: Department of Survey)

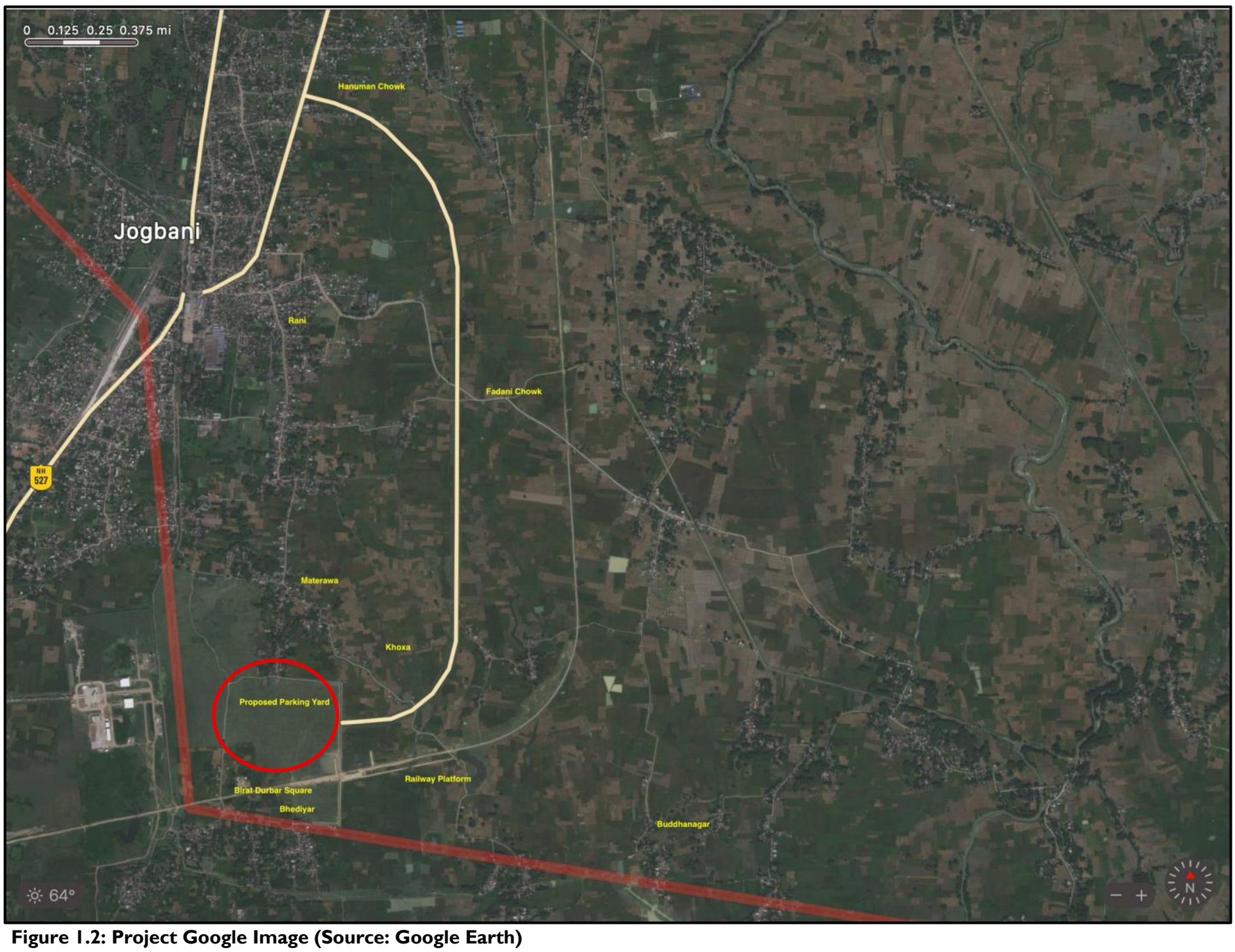
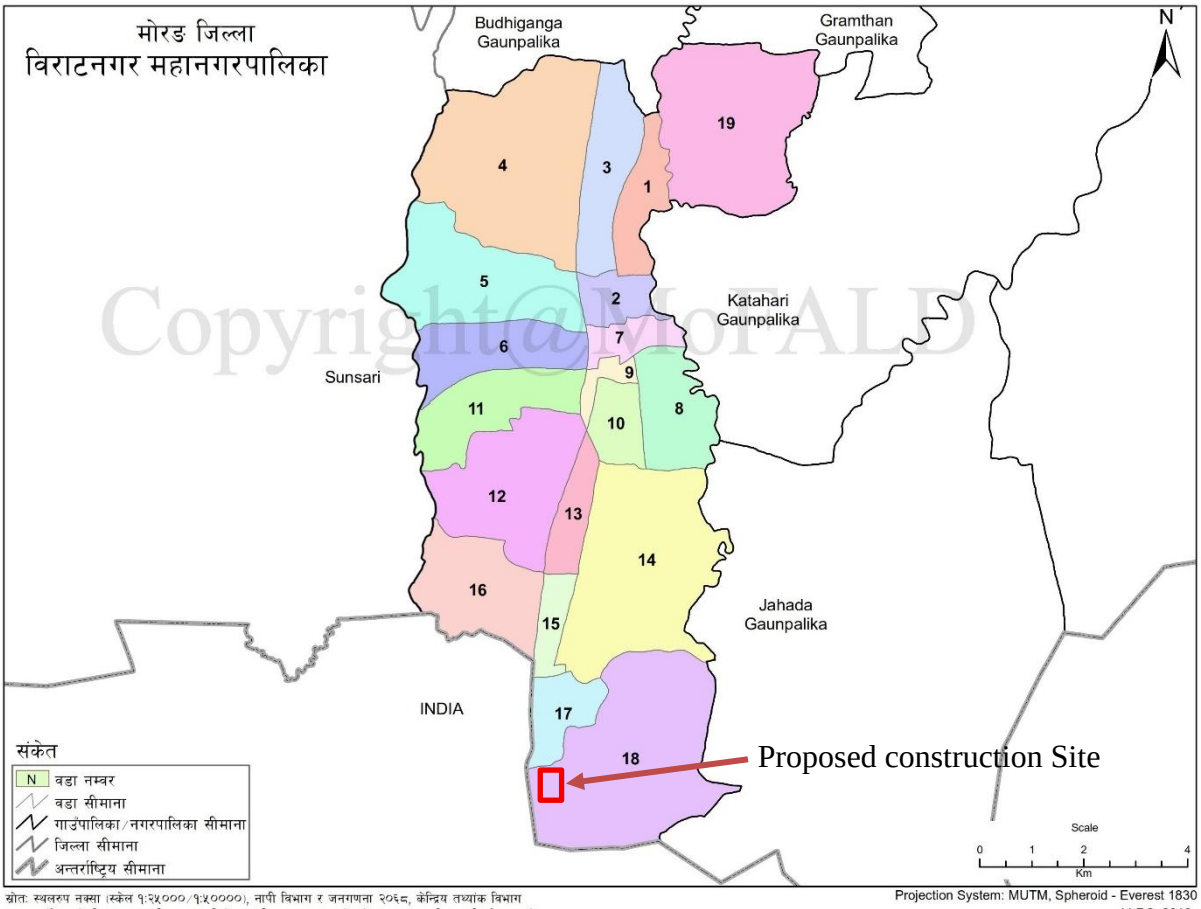


Figure 1.2: Project Google Image (Source: Google Earth)



स्रोत: स्थलरुप नक्सा (स्केल १:२५०००/१:५००००), नापी विभाग र जनगणना २०६८, केन्द्रिय तथ्यांक विभाग
तयार पार्ने: गाउँपालिका, नगरपालिका तथा विशेष, संरक्षित वा स्वायत्त क्षेत्रको संख्या तथा सीमाना निर्धारण आयोग

Figure 1.3: Project Location in Municipality Map (Source: MoFAGA

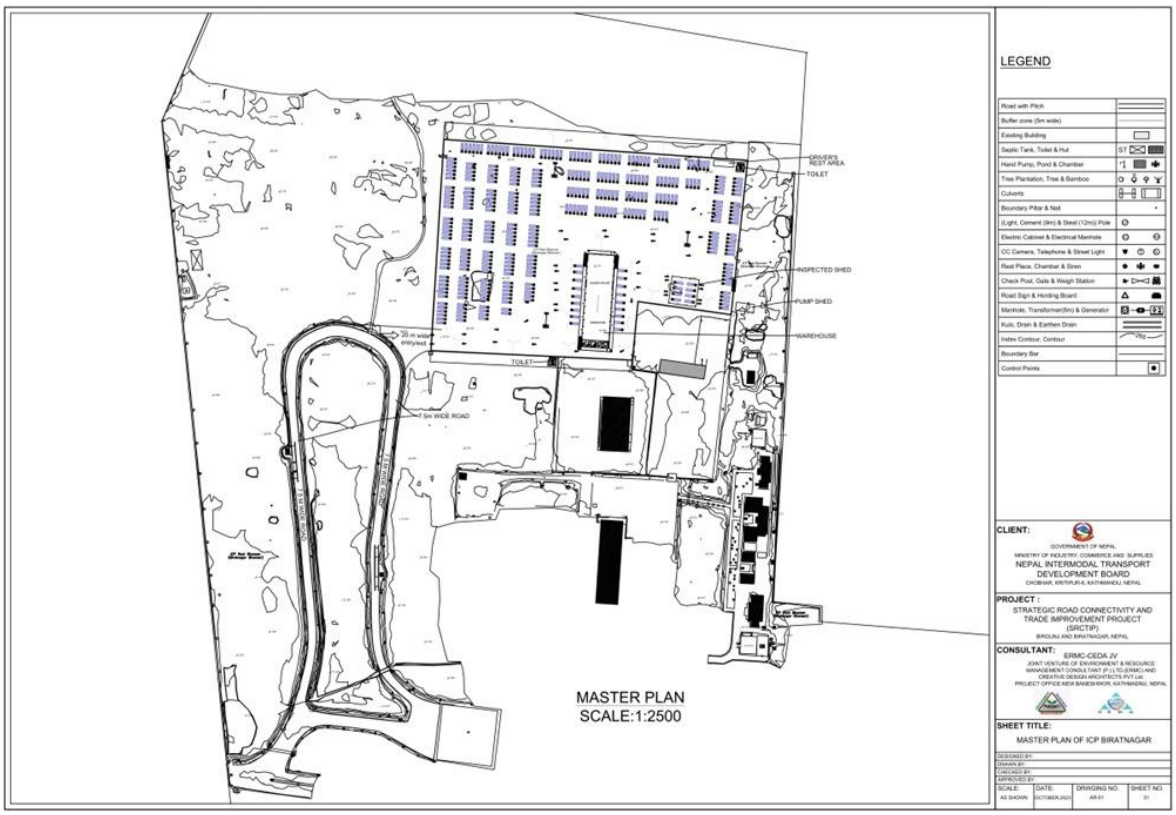


Figure 1.4: Schematic plan of the infrastructures

Photo: Proposed construction site inside ICP

1.3.2 Design of the project

The proposed project involves the construction of additional facilities within the existing Inland Container Depot (ICP), designed with careful consideration of technical feasibility, environmental and social safeguards, and operational efficiency. The infrastructure layout enhances safety and functionality during both construction and operation, adhering to national standards and international best practices. Emphasis has been placed on minimizing adverse impacts, maximizing benefits, and integrating key provisions for worker safety, community coordination, emergency preparedness, and grievance redress.

Key components include steel frame structures, steel girders, and Interlocking Concrete Blocks (ICBs). Steel frames offer strength, flexibility, and efficiency, making them suitable for industrial buildings. Steel girders act as primary load-bearing elements that distribute structural loads to vertical supports. ICBs, particularly M50 grade (50 MPa strength), are used for paving due to their high durability, load capacity, and quick, mortar-free installation.

Major facilities include a warehouse (90.86 m × 31.11 m) with 401.14 tons of steel and 746.24 m^3 of concrete, covering 2,808.71 m^2; an inspection shed (25.23 m × 25.06 m) with 57.44 tons of steel and 121.94 m^3 of concrete, covering 602.45 m^2; and a parking yard paved with 80 mm thick M50 ICBs, measuring 277.38 m × 192.80 m and covering 42,039.84 m^2.

1.3.3 Land Acquisition

The permanent infrastructures are proposed and constructed in about 4.2 hectares within the existing ICP area. As the temporary land for storage of spoil generated from the excavation work, stockpiling of construction materials will be managed within ICP premises, no additional public or private land is required. The construction manpower will be placed in rented house near the site or by constructing camp within the government/rented land.

1.3.4 Resource requirement

All materials required for the reconstruction of proposed works will be procured locally, domestic purchase/rental and foreign imports. The construction materials such as coarse and fine aggregates will be sourced from approved river aggregates suppliers' quarries with GoN's environmental clearance. Cements, fuel and construction equipment such as excavators, water browser, trees cutter, generator are procured from domestic purchase/rental. The steel and other equipment will be procured from foreign import.

The estimated manpower requirement for construction of the proposed works will be about 8695 person days (skilled-about 14 number) and 46063 person-day (Unskilled-76 number). The Contractor is expected to hire most of the labour locally due to the availability of unskilled/semiskilled/skilled labours in the project area.

1.3.4 Corridor of Impacts

For the scope of this ESMP, the impact areas those classified on the basis of the proximity and magnitude of the impacts as described in the National Environment Impact Assessment Guidelines (GoN, 2050) are:

Direct Impact Area (DIA): The Direct Impact Area (DIA) refers to the zone where construction activities and project facilities are located, and where a high level of direct impact on environmental components is anticipated.

Indirect Impact Area (IIA): This refers to the immediate vicinity of the project site where environmental components may face indirect impacts from construction activities.

The direct and indirect impact areas are listed in Table below.

Table 1-2: Impact area delineation

Direct Impact Area	Indirect Impact Area
Existing ICP premises where the construction work takes place	Ward 18 of Biratnagar Metropolitan City, the site is located in these wards, locals were also consulted.

1.3.4 Environmental and Social Baseline Condition

The environmental and social baseline information used in this ESMP are based the detail Environmental and Social Screening Report (ESSR), design report of Biratnagar ICP and information collected during the preliminary filed visits by the experts of PCO-NITDB and Construction Supervision Consultants (CSC). The information on existing physical, biological and socio-economic and cultural environment were collected from both primary and secondary source. A team with environmental and social safeguard experts of CSC had conducted a visit (21 July, 2023 to 24 July, 2023 and 28 December, 2024 to 6 January, 2025) and carried out field investigation through observation, measurement and consultation to collect the baseline information. The relevant information collected from geo-tech expert, engineers and other team members from the PCO and CSC were also used in the report.

The topographical map (2687:10A Biratnagar) was reviewed for land use and other features of the project area. The geological map of the project area was reviewed to understand the underlying geology of the project area. The meteorological and hydrological data of the study area were analyzed by the design team with reference to the nearest meteorological station

at Biratnagar airport. The wildlife and vegetation data of the ICP area was acquired by site visit and verified from publications of Division Forest Office, Morang and other institutions and research papers for reference. Local level socio-economic and cultural information were reviewed from CBS publication, Biratnagar Metropolitan City Profile, 2022.

The ESMP has been updated as per the approved *Brief Environmental Study (BES) for the construction of infrastructures and link road improvement in the existing Biratnagar ICP* which has been approved by the Department of Industry in May, 2025.

1.3.4.1 Physical Environment

The project site in Biratnagar lies on the southern low-lying plains with an elevation of 61 m AMSL, characterized by gently rolling terrain and bordered by the North Bihar Plains. The Singhiya River, located 2 to 3.5 km east of the site, flows southward, and the Kichhak Badh Pokhari, a religiously significant natural pond, lies 1.5 km southeast of the project area. The quarry sites are not within the scope of the study, however, the detail assessment of quarry sites in terms of recovery volume, haulage distance and cost per m^3, quantity and quality of material will be done while monitoring. The project area, including the ICP, experiences annual flooding in nearby low-lying villages, particularly in Ward 18, which is identified as flood-prone in the Biratnagar Metropolitan City's Risk and Sensitive Land Use Plan, 2080. The project area is low lying with poor drainage facility and hence is susceptible to inundation, especially during rainy season. The drain system in the ICP gate needs an improvement. Environmental monitoring results indicate that air, noise, and water quality levels are within the permissible limits set by the Nepal National Ambient Air Quality Standard (2012), National Noise Quality Standard (2012), and Nepal Drinking Water Quality Standard (2005), respectively.

1.3.4.2 Biological Environment

Only two stands of large trees of Sal (*Shorea robusta*) are found in the proposed construction site which will be preserved. Fauna such as Rabbit (*Lepus nigricollis)*, Squirrel (*Funambulus pennantii)*, Jackal (*Canis aureus)*, Mongoose (*Herpestes edwardsii)* are seen in the project sites. As per the locals, frog (*Limnonectes teraiensis)*, bronze back tree snake (*Dendrelaphis tristis)*, common cat snakes (*Boiga trigonata trigonata),* Common Blind Snake (*Rhamphotyphlops braminus)* and turtles are some of the Herpetofauna found in project area.

1.3.4.3 Socio-economic and Cultural Environment

According to the National Population and Housing Census, 2021, there are 1938 households with population with 4134 males and 3817 females in ward no. 18. The major caste and ethnicity of the project area are Yadav, Kewat, Brahman, Shah (Teli), Mushahar, Dalit, Thakur. There is no homogeneous settlement of indigenous community. According to the NPHC 2021, most of all (97.83%) of ward 18 households (1938) follows the Hindu religion. with Islam (38 HHs) and Buddhism (4 HHs). About 97.47 % of HHs speaks Maithali only 21 HHs speaks Nepali and 13 HHs Urdu, Materawa, Khoksa, Behidyar, Buddhanagar and Rani are the major settlement lying adjacent to the project area. All these settlement lies 200 m to 2 km far from the project site. In terms of occupation, majority of the population living in the vicinity is depending on agriculture followed by labour and trade and business while a very low

percentage of the population are involved in foreign employment. The Birat Durbar Square, located about 600 m southeast of the ICP gate and 1.2 km from the proposed parking yard, lies outside the ICP boundary. The Rajajithan structure, adjacent to the southern ICP boundary, is archaeologically sensitive, but the proposed parking yard is on the opposite end, posing no archaeological concerns. The Bajrangbali Temple is situated 1 km west of the ICP boundary.

1.4 Impacts on Disadvantages and Vulnerable Group

As the construction work is limited within ICP premises, no direct impact to the community is anticipated. Among the 1938 HHs and 7984 Population, the data from female-headed households 144 HHs, marginalized ethnic groups (Dalits, 399 HHs), Mushhar 406 HHs, Muslims/ 73 HHs, 4 HHs Buddhis, elderly (113 Number above 70 years), disabled (75 Number),

Among the 10 listed Indigenous People of Tarai, Dhanuk (152 HHs), Gangai (145 HHs), Rajbanshi (88 HHs), Meche (10 HHs) and Kisan Tharu (1 HH) are residing in the ward. Indigenous communities such as Dhimal, Satar, Jhangad, Tajpuriya are reported in Metropolitan city but not in the ward 18. In the whole metropolitan city, there are 466 HHs are landless. However, there is no landless reported in the affected ward.

2 PROJECT SPECIFIC ENVIRONMENTAL AND SOCIAL RISKS AND MITIGATION MEASURES

The infrastructures construction in existing ICP has both the beneficial and adverse environmental and social issues. The employment creation, income generation, better facilities and revenue increment are some of the beneficial impacts during the construction and operation stages. Waste generation, dust emission, noise, health and safety, SEA/SH, GBV, social disputes are some of the adverse impacts during preconstruction, construction and post-construction phases.

The impacts are separately mentioned as beneficial and adverse impacts on physical, biological, socio-economic/cultural environments for pre-construction, construction and operation stage. For beneficial impacts, benefit augmentation measures are considered and for adverse impacts, adverse impacts mitigation measures are considered.

2.1 Beneficial Environmental and Social Issues and Mitigation Measures

The construction/upgrading activities of the existing ICP will increase the employment opportunity and the flow of the people will create the trade and business opportunities to the locals. During the operation stage, the increased parking area and warehouse, and better inspection shed in ICP will enhance their efficiencies. The existing drain issues outside of the ICP gate has also been considered during the implementation.

The benefit augmentation measures will enhance the beneficial environmental and social condition of the affected areas. The proponent and contractor will implement the proposed enhancement measures such as employment opportunity and capacity enhancement program as prime responsibilities.

The beneficial impacts and their enhancement measures during construction and operation are given below:

Table 2-1: Environmental and Social Management Plan (Benefit Augmentation Measures)

Activities	Associated beneficial impacts	Benefit augmentation measures	Responsibilities	Time	Budget
Construction Phase					
Construction related activities, site clearance, excavation etc.	Employment generation and increase in income – The total requirement for unskilled labors is 76 person (46,063 person-days) and skilled labours are 14 person (8695 person-days. – Increases the economic activities and enterprise development with multiplier effect contributing local economic growth.	– The project will include a binding clause in the contractor's ESMP to give employment priority to the local people of the project affected areas; – The local people particularly poor; dalits, ethnic, minority and women will be given priority for employment and on-the-job trainings. – Coordinate with ward office for information dissemination of employment opportunities.	Contractor Supervision Team, NITDB	During construction period	50,000, Coordination Cost is the ESMP of the Link Road Improvement
Business opportunities for local people to cater the need of workforce, Trade enhancement	Enterprise development and business promotion, – The existing shops, local business and restaurant get boosted due to the higher demands from the workers.	– Local people will be encouraged to establish business that supplies groceries and equipment needs of the project. – Give priority to use local products;	Contractor Supervision Team, NITDB	During construction work,	No cost is required
Construction related/labour requiring activities, local Employment	Skill Enhancement of workers and locals – The construction activities enhance workers' skills in health and safety, EMP implementation, electric and other semiskilled and technical	– Project will give equipment operation related trainings to the newly employed workers depending upon their skills and the nature of the work offered	Contractor/ Supervision Team	Before and during the construction work	50,000 Contractors' responsibility for labour Training for local in road package

Activities	Associated beneficial impacts	Benefit augmentation measures	Responsibilities	Time	Budget
	skills which can lead to better employment opportunities in the future.				
Operation Phase					
Better Infrastructures and facilities	Adequate parking space and frequency of CFs Enhancing Biratnagar ICP can streamline customs processes, reduce processing times, and eliminate bottlenecks, facilitating faster clearance of goods.	The client (and the operator) will monitor the effectiveness and the operator manages the necessary process.	Operators/ NITDB	Entire ICP operation	No cost is required
Flow of CFs, higher number of CFs, ICP efficiency increment	Revenue Collection with better infrastructures – The improved efficiency can increase the volume of legally traded goods, thus increasing customs revenue for the government. This fosters better diplomatic and economic relationships between the two countries.	The client (and the operator) will monitor the effectiveness and the operator manages the necessary process.	Operators/ NITDB	Entire ICP operation	No cost is required

2.2 Adverse Environmental and Social Impacts

As the ICP is already established, the additional land acquisitions and major construction activities are not required. The waste management, water treatment, health and safety management have been considered in the existing ICP.

The adverse environmental and social safeguard issues in different phase are grouped into following Table.

Table 2-2: Environmental and Social Risks from the proposed ICP infrastructures

Preconstruction/Planning Stage	Construction Stage	(Operation & Decommissioning) Stage
– Risk of poor contractor's environmental, social, health and safety performance (ESHS), leading to non-compliance – Failure to adhere to ESMP can result project delays. – Inadequate training causing gaps in the ESMP awareness and implementation – Risk of poor stakeholder engagement, dissatisfaction, or grievances escalating into conflict – Delayed permits from DFO delaying project start or causing legal complications – Inadequate site-specific ESHMP posing non-compliance and operational risks – Security risk due to unauthorized entry if areas are not properly demarcated	– Unsuitable sites selection/ over-extraction leading to environmental degradation – Accidents, diseases, heat stress, exposure to chemicals, and unsafe working conditions – Increased risk of GBV, SEA/SH and STD for workers and community incidents due to labour influx – Community grievances over employment, noise, dust, and access restrictions – Non-compliance of Labour Act of Nepal as well as WB Standard on ESS2 leading to poor working condition – Child labour, forced labour – Clearing vegetation cover causing Habitat loss, risk to protected species, and ecosystem disruption – Air pollution including dust causing health hazards to workers and local residents – Sanitation, disease outbreaks, conflicts, and waste management issues from poor construction camp – Road congestion, increased accident risk, and damage to local roads due to higher number of vehicles	– Delays, leftover spoil/waste, incomplete rehabilitation, community grievances during dismantling – Pollution, blockage of drainage due to operation waste – Risk of accidents, exposure to hazardous materials, inadequate PPE usage – Health and nuisance problems for communities – Increased risk due to operational traffic or decommissioning vehicles – Improper disposal leading to soil, water pollution, and legal non-compliance

2.2.1 Preconstruction/Planning Stage

Preconstruction stage activities include the necessary assessment and permit such as approval of environmental assessment, construction material and equipment sourcing, site clearance. Public dissatisfaction and conflict, legal obstruction and impacts related to the site clearance such as air pollution, noise, safety and site security will occur if not considered initially.

Table 2-3: Environmental and Social Risks and Mitigation Measures during pre-construction stage

Activities	Associated Risk/ Impacts	Adverse Impact Mitigation Measures/ Activities	Responsible Agency	Timeline	Budget
Finalization of Environmental and Social Documents (ESMP, BES)	– Inadequate ESMP/BES will lead to regulatory non-compliance and project delay. – It may fail to address key environmental and social issues.	– The procedural requirements of ESMP/BES will be followed. – All of the necessary approval (ESMP-WB will review and approve, BES-review and approved by the Department of Industry) – Detailed design, drawings and documents and budget will be included.	CSC/NITDB	Before the contract and construction	Included in design phase of the project
Inclusion of the ESMP in Bid Documents	– Failure to adhere to ESMP can result project delays and contractor's negligence.	An approved ESMP will be included in bidding documents and contracts.	CSC/NITDB	Before the contract for the construction	Included in design phase of the project
Preparation of Contractor's Environmental, health and Social Management plan and approval	– Inadequate site-specific ESHMP posing non-compliance of safeguard and harm to workers, community and the environment.	– The contractor will submit a detailed CHESMP as part of their bid requirement with different plans such as spoil, waste, traffic, health & safety, biodiversity etc. – The NITDB will consider availing the approved ESMP and BES to the contractors to guide their C-ESHMP development and ensure budgetary considerations in their bids.	Contractor/CSC/NITDB	Before construction activities	It is under the contractor's responsibilities before the construction works starts

Hiring labour and Establishing labour camp	– Hiring workers without workforce assessment, worker's background, and site selection without stakeholder engagement will bring the conflicts – Child and forced labor	– Community engagement and local employment will be considered during hiring the labour. – The labour camp will be established in dedicated area within ICP or in rented apartments by the contractor in coordination with the NITDB – Age verification documents, recommendation from local authority	Contractor/NITDB	Before construction activities	Contractor's responsibilities, NRs. 20,00,000 has been allocated in BoQ for Contractor's Camp
EMP Implementation Training	– Inadequate training causing gaps in the ESMP awareness/implementation leading to environmental harm, putting workers and the community at risk	– Regular training sessions for all relevant personnel on EMP implementation	Contractor/CSC/NITDB	Before Construction Activities	100,000 (Included in ESMP implementation Cost)
Site security	– Security risk due to unauthorized entry to the ICP area	– A security plan that includes 24/7 surveillance, CCTV, security personnel and emergency response protocols with training to security personnel shall be developed	Contractor/CSC/NITDB	Before Construction Activities	100,000 CCTV will be installed in coordination with ICP.

2.2.2 Construction Stage

Construction stage includes the impacts such as land use change, health and safety, impacts related to labour camp, social disturbances from construction crew, dust emission, noise, air and water pollution, waste generation and stockpiling of construction materials. The complaints from the public and social disputes are also associated during construction. Adverse impacts during construction and their mitigation measures are provided in Table below:

Table 2-4: Environmental and Social Risks and Mitigation Measures during Construction Stage

Activities	Associated Issues/ Impacts	Adverse Mitigation Measures/ Activities	Responsible Agency	Timeline	Budget
A. Socio-economic and Cultural Environment					
Construction of parking area and warehouse	– Conversion of 4.2 ha grass land to the paved area and infrastructures – Loss of Top Soil	The land use change is irreversible in this sub-project. – All the top soil from the sites will be preserved and re-use it on the site approved by Supervising Consultant. – Top soil will be used in greenery management, plantation and will be given to farmers upon request	Contractor Supervision Team, NITDB	During construction	No cost is required
Construction works, labour influx, vehicle movement	– Occupational Health & Safety of Workers and – Community health &: safety – Risks from exposure to hazardous materials, dust, noise, and physical strain – Air/dust and noise pollution	– The contractor will develop and Safety management plan, Traffic Management Plan and Emergency Response Plan to be included in Contractor's EHSMP with the provision of designated OHS staff to oversee related issues. – Provision for incident reporting and documentation. – Health insurance to the workers. – First aid kits, standby vehicle, and fire extinguishers will be provided. – To avoid risks due to the movement of vehicles, speed limit will be provisioned. – Soft and hard barricades, and warning signs will be placed in the site.	Contractor	Immediately after the construction works	250,000

		– Comprehensive health and safety training to workers, including the use of PPEs by workers e.g. safety helmets, safety belt, boots, gloves. – Provide appropriate facilities such as access for approach and exit, temporary toilets, drinking water provisions, first aid kits. – Maintain safe distances between the earthmoving equipment and working labors. – Work will be stopped in the heavy raining days and hot wave days. Emergency assembly point of steel frame will be provisioned. – Welding helmet with proper lens shade and welding googles (hot works). Gloves, safety googles (Silicosis) Non-slip safety footwear, Helmet with chin strap (Working at height) can be recommended as specialist PPEs.			
Labour Influx for construction works	– Breaching of local social/cultural norms and values and human trafficking – Increased incidents of GBV, SEA, and SH,	– Recruit local labour to the extent they are available to minimize labour influx. – Strict anti-GBV, SEA/SH plans shall be developed and enforced including community awareness	Contractor/NITDB	During construction and after labour camp establishment	100,000

	– Spread of sexually transmitted infections (STIs) and other diseases. – Spread of sexually transmitted infections (STIs) and other diseases.	– Community awareness about the risks and prevention of STIs including human trafficking – Harassment, intimidation and/or exploitation will be prevented or addressed with clearly displayed IEC prohibition signage and CoC			
Outside Labour influx for construction work, Hiring labour for works	– Social dispute in the community due to irresponsible behaviour of the workers such as gambling and drinking. – If local do not get the employment opportunity, it causes dissatisfaction	– Awareness program to the workers on cultural and social norms of local – A transparent grievance redress mechanism shall be established to address disputes and dissatisfaction promptly. – Code of conduct (CoC) will be drafted in simple and local language. Workers will be orientated about the CoC before getting their sign on the CoC and it will be followed strictly	Contractor/NITDB	During construction work, immediately after complaints/grievance received	In awareness program above
Construction camp establishment	Inadequate sanitation and waste management in camps can lead to the spread of diseases.	– A standard Labour camp facilities will be followed if established. The labour management procedure of ESS 2 of ESF will be followed. – Health and hygiene in the camp site (against unsafe working conditions, accidents, transmission of communicable diseases etc.) will be given top priority. – Adequate sanitation, waste management, and clean water facilities	Contractor	Start of the construction work	150,000

		along with proper ventilation, lightening and security will be provided in construction camps to ensure the health and well-being of workers. – A comprehensive waste management with strategies for recycling, reuse will be developed and implemented. – Coordination with local communities and authorities – If require, establish Labour camp with i) well-ventilated rooms ii) lighting facilities, iii) adequate toilet and bathroom facilities iv) common cooking and dining facilities, v) adequate communication facilities, vi) first aid facilities, vii) runoff drainage facilities, ix) solid waste collection and storage and transportation facilities, x) water supply facilities, xi) grosser and consumable shops, xii) LPG gas facilities for cooking etc. – Toilets for the workforce to be established at least 50 m away from water sources – Prohibit Open waste disposal – Workers' health will be screened against communicable diseases – Encourage local labor force for project employment.			

Hiring labour for construction works	– Discrimination in hiring practices can lead to social tension and exclusion of local and marginalized groups. – Child labour, forced labour and Gender discrimination when Children and Women are labour work	– An employment policy will be prepared so that the local people may not be deprived of employment opportunities. – Local people above the age of 18 will be given preference for employment. – Under aged child of less than 18 years will not be employed in the project works. (Age verification documents such as National ID, Citizenship, License, Passport etc. recommendation from local authority) – The child related policies against child labor will be enforced and the workers meet the legal age requirements. – Forced labor will be prohibited in the construction works. – No worker will be discriminated in the aspects of wage rates, trainings, or other benefits and services – A documented employment letter will be provided to each of the workers prior to engagement in the construction works stating their rights related to hours of work, wages, overtime, compensation, and benefits as per the national labor law. – Retrenchment of workers without prior notification on the basis of work	Contractor	Before and during construction eork	In awareness program above

		relationships will be prohibited. The workers will be paid all his dues and benefits prior to the termination.			
Vehicle movement during transportation of material	– Road accident	– The traffic management plan will include clear signage, speed limits, flag personnel if needed, and proper coordination to prevent accidents and minimize traffic congestion. The plan will be considered for: – Entry and exit points between the construction site and public roads – Interaction with the operating ICP to avoid disruption – Movement within the construction area, including designated paths for vehicles and workers	Contractor/NITDB	During material transportation	50,000
Construction work	– Grievance	– A focal person for the Grievance related to SEA/SH/GBV will be designated. – Grievance Redress Mechanism will be activated and strengthened	Proponent	During construction	250,000
B. **Biological environment**					
Site clearance	– Vegetation removal	– Coordinate with DFO, Morang – Preserve Sal trees of the site – Greenery and tree plantation	Proponent/Contractor	During construction	50,000

Vegetation removal	– loss of habitats for herpetofauna (both reptiles and amphibians	– The animal found during the construction will be handed over to the DFO and Morang and Koshi Tappu Wildlife Reserves	Proponent/Contractor	During construction	No cost is required.
C. Physical and Chemical Environment					
Site clearance, transportation & loading-unloading of construction materials	Emission of fugitive dust and reduce air quality causing health issues.	– Dust control measures such as water spraying, covering of stockpiles, and minimizing vehicle speeds on unpaved roads will be implemented. – The occupational workers at the construction sites, engineers and supervisors will be provided with air masks, helmets, and safety goggles with mandatory use of them.	Contractor	During the construction	50,000
Stockpiling of construction material	If the construction materials are haphazardly placed at construction sites, or random sites, then this will cause land degradation, pose threats to safety of the community, and hinders public movement and traffic management.	– Designated, well-managed areas for material stockpiling will be established away from sensitive areas with fencing, covering and record-keeping. – The sites will be selected after the consultation with NITDB and their approval to use the land informing locals if private land is needed. – Water spraying over stockpiled materials may also be required. – Regular inspections will be done to ensure that stockpiles are managed	Contractor		

		properly and do not pose environmental or safety risks.			
Civil works, excavation etc.	Improper disposal of construction waste and spoil can lead to soil, water contamination.	– A solid waste collection and storage will be followed the established system in the existing ICP area. – Garbage containers of adequate size will be placed in the construction area. The garbage will be collected as per the existing management provision. – Spoil will be used as backfilling. – A construction waste and spoil disposal plan including hazardous waste management plan will be developed and implemented by the contractor.	Contractor	During construction period	250,000
Operation of construction vehicles and machineries,	Air pollution which may impact the human and environment	– All construction vehicles will comply with the Act with mandatory Green Sticker, – Maintenance of equipment and vehicles regularly to control air pollution. – Air pollutant parameters (TSPM, PM10, Sox, NOx, Cox) will be monitored regularly during construction. Conforming NAAQS of Nepal.	Contractor implements Supervision Team, NITDB monitor	Throughout the construction period	660,000

Operation of construction vehicles and machineries,	Noise generation which may impact the human and environment	– Ensure plant and equipment to keep noise at minimum. – Workers will be provided with appropriate ear muffs/plugs specially at crusher site – Prohibition on the blowing of horn in critical stretches close to settlement and near the school area along the road. – Noise levels (1 hr Leq dB(A)) levels will be monitored regularly conforming WHO standards.	Contractor	During construction	120,000
Movement of vehicles	Movement of vehicles during construction activities can lead to increased traffic congestion and the risk of accidents.	– A traffic management plans that include designated routes, timing and speed limit will be developed and implemented. – Clear signage, signals will be installed. – Speed limit and Traffic Safety – The construction traffic will be supervised monitored regularly to ensure the given instructions are complied.	Contractor		50,000
Quarry Sites and its Operation (if the contractor	Environmental degradation, noise, dust, over exploitation of resources	– Obtain from the legally operating crusher industries.	Contractor Supervision Team, NITDB	Before obtaining the construction material	No budget is required. Supervision cost will be borne by

has its own crusher)		– The quarry sites and amount of quarrying material will be monitored by the contractors/DSC/NITDB. Monitoring quality of quarrying material			respective agencies
Chemical used during construction	Chemical Environment	– Store chemicals in designated areas with proper signage and secondary containment. – Use leak-proof, clearly labeled containers for all chemicals. – Train workers on safe handling, storage, and emergency spill response in accordance of Material Safety Data Sheet (MSDS) – Conduct regular toolbox talks on the hazards associated with specific chemicals. – Install spill containment systems (e.g., bunds, drip trays, or absorbent mats) in high-risk areas. – Provide fire extinguishers for chemical hazards near storage areas. – Report spills to the site supervisor and relevant authorities as required. – Regularly inspect and maintain all storage and spill control equipment.	Contractor Supervision Team, NITDB	During construction	Included in EHS awareness

2.2.3 Post Construction Stage (Decommissioning and Operation Stage)

Post construction stage includes both decommissioning such as dismantling, demolition, and site restoration and operation of additional infrastructures of ICP. Both the activities can have significant environmental and social impacts. The impacts those were not considered initially will be considered in the operation stage of the proposed infrastructures.

The existing systems of waste management, health and safety, water treatment and other provisioned in the operation will be strengthened.

Table 2-5: Environmental and Social Risks and Mitigation Measures during Operation Stage

Activities	Associated Issues/ Impacts	Adverse impact Mitigation Measures	Responsibility	Timing	Budget
Physical Environment					
Operation of ICP/ Dismantling and demolition of the temporary structures	Noise, Dust Emission, and Air Pollution	– Noise control measures, dust suppression and air quality monitoring will be considered during the post construction activities. Enhance the existing management system	NITDB/Operators	Will be prepared by NITDB	
Operation of ICP	Solid and Liquid Waste	– Enhancing the existing waste management system	NITDB/Operators	Will be prepared by NITDB	
Biological Environment					
Implementing management plan of construction work	Failure to comply mitigation measures, such as tree planting,	Strict monitoring of the compliance and instruct the contractor for complete the remaining task	Contractor/NITDB	After construction	Included in civil contract
Socio-economic and Cultural Environment					
Dismantling and demolition of the temporary structures	Risks of accidents and injuries to workers, such as falling debris, equipment malfunctions,	Strict safety protocols, including the use of personal protective equipment (PPE), the presence of safety officers on-site will be implemented.	Contractor/NITDB	After construction	Included in civil contract

	and exposure to hazardous materials.				
Implementing management plan of construction work	Failure to complete or maintain mitigation measures, such as tree planting, spoil management, activities for social supports can lead to environmental and social problems.	– Strict safety protocols, including the use of personal protective equipment (PPE), the presence of safety officers on-site will be implemented. – The existing First Aid will be enhanced.	Contractor/NITDB	After construction	Included in civil contract
Operation of the ICP area	risks, including falls, equipment accidents, and exposure to hazardous materials.	– The operator will update/develop and implement a safety management plan for the operations phase. – Follow health and safety guidelines of the operation stage.	NITDB	During operation	In the regular program of ICP operators

Note: Trans Nepal JV responsible for operating the Birgunj ICP. It is responsible for implementing and maintaining safety protocols that protect workers, drivers, and visitors, including the provision of Personal Protective Equipment (PPE), enforcement of safe work practices, emergency preparedness, and coordination with customs and security agencies.

The Trans Nepal oversees the organized flow of cargo trucks, containers, and vehicles to prevent congestion, reduce delays, and ensure smooth entry and exit through designated lanes. This includes maintaining clear signage, managing parking zones, regulating vehicle movement ensuring that vehicle loading and unloading operations follow safe procedures.

3 EMERGENCY, PREPAREDNESS AND RESPONSE

Emergency incidents occurring on site may include spillage, occupational exposure to hazardous materials, equipment failure, accidents, solid waste and fire. These emergency events could seriously affect workers, communities, operators, and the environment.

The Emergency, Preparedness and Response Management Plan for the construction site will be displayed on Safety Notice Boards and other prominent locations around the site. The plan shall be reviewed during EHS committee meetings and all the workers will be trained.

Sufficient first aid facilities will be available for the site as specified ***'First Aid'*** and qualified First Aid personnel will be appointed to meet the requirements of EHS Legislation.

The unfavorable weather conditions refer to any weather event that increases the risk of having an accident. Rain and heat are all example of unfavorable weather conditions and following precautions is planned:

- During heavy rains, accidents, or emergencies of any kind, all work shall be suspended.
- Sawing, cutting, grinding, sanding, chipping, shall be conducted with proper safety measures as applicable.
- The contractor shall ensure shade station and drinking water in the work sites along with safe sight distance in both construction areas and construction camp sites.

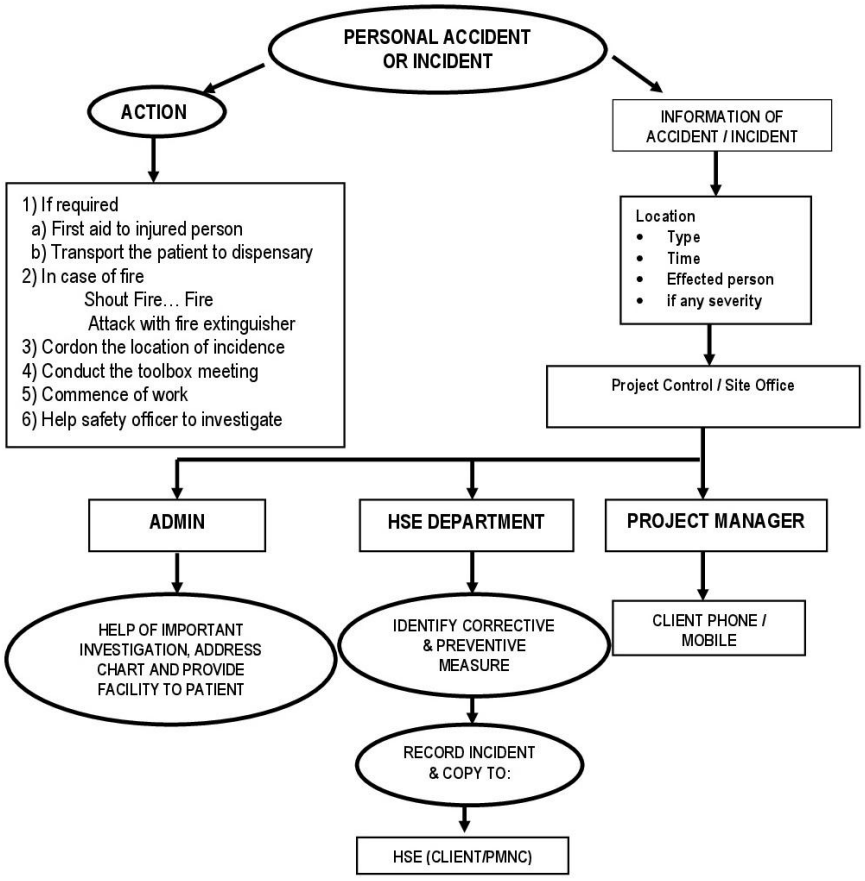


Figure 3.1: Emergency preparedness and health and safety mechanism

In case of serious injury special arrangements shall be made available based upon site conditions. For any severe injury, the Project Manager shall be authorized to take necessary arrangements for lifting / transporting the injured to the correct location.

3.1 Accident and Emergency Management Plan

The Accident and Emergency Management Plan need to be prepared to handle unforeseen events during emergency operations. This emergency management plan highlights some key feature of the emergency preparedness in the event of such unforeseen events (Table 3-1).

Table 3-1: Accident and Emergency Management Plan

SN	Activities	Timing of Actions	Location	Responsibility
1	Prepare and submit an accident and emergency management plan, including response methods, to CSC/NITDB for approval.	Pre-construction (at least a month before starts of work)		Contractor will prepare and CSC/NITDB will approve it
2	Establish and operate a health clinic within the camps, ensuring it is adequately staffed, well-maintained, and equipped to serve the maximum workforce efficiently.	Prior to the commencement of construction and land clearance	Construction site	Contractor
3	Proper implementation of OHS plan,	As designated in the plan	As in the plan	Contractor/Operator
4	Provide stabilization equipment and facilities for the injured before transferring them to a well-equipped hospital.	Construction	Health care facility	Contractor
5	Maintain medical stock for waterborne diseases to manage potential outbreaks in the camp or surrounding areas.	Construction	Construction site health camp	Contractor
6	Monitoring of the above activities	Construction, Operation	As in the plan	Contractor/Operator/client/CSC

3.2 Hazardous Waste Management Plan

In the context of construction activities within Biratnagar ICP, hazardous materials such as diesel, lubricants, paints, welding gases, and cleaning chemicals will be used. These materials may pose risks of spillage, leakage, and fire hazards. Similarly, during operation, waste oils from vehicle maintenance, used batteries, chemical residues from cargo handling, and expired goods may create environmental and health risks. The existing operator has been managing them during operation. However, the NITDB (the client) shall focus on strengthening the capacity of the contractor (during construction) including operator (during operation) by considering designated storage areas with proper ventilation, labeling, and secondary containment. Trained personnel will handle hazardous substances using appropriate PPE, and Material Safety Data Sheets (MSDS) are maintained on-site. Waste is disposed of through authorized handlers, and regular inspections are conducted to prevent contamination. Emergency response measures, including spill kits, fire extinguishers, and first aid facilities, are in place to ensure safety and compliance with national environmental and health regulations.

4 INSTITUTIONAL ARRANGEMENT AND CAPACITY BUILDING

4.1 Institutional Arrangement

An effective institutional setup is essential for successful ESMP implementation. The Ministry of Industry, Commerce and Supplies (MoICS) has established a Project Coordination Office (PCO) in Kathmandu, supported by a Safeguard Team to ensure compliance with GoN and World Bank safeguards. The Nepal Intermodal Transport Development Board (NITDB) will implement the project on the ground. Construction Supervision Consultants (CSC) will provide technical support, including engineers and environmental and social (E&S) specialists, to assist NITDB and oversee project implementation. The CSC's safeguard team will regularly monitor ESMP implementation and submit reports to the PCO. At the construction level, contractors must follow ESMP measures and assign Environmental, Social, and Health Experts for implementation. CSC's E&S specialists will visit the site to ensure compliance with safeguard requirements. The CSC will also support legal compliance, coordination with stakeholders, and reporting. Overall responsibility for legal compliance, sustainability, and institutional capacity development lies with the PCO. Monitoring and evaluation reports will be submitted internally by CSC and PCO.

Table 4-1: Roles and Responsibilities of the Stakeholders in ESMP Implementation

SN	Stakeholder	Roles and Responsibilities	Time Schedule
1	World Bank	• Approves ESMP and reviews project documents • Reviews safeguard monitoring reports and takes corrective actions	ESMP approval Before bidding. Throughout the project period.
2	PCO - Environmental and social specialists within the PCO	• Reviews ESMP and grants implementation approval • Ensures safeguard measures in bidding documents • Monitors ESMP compliance and reviews reports • Investigates incidents and conducts root cause analysis • Provides training and engages stakeholders	Before contract bidding construction and operation phases
3	NITDB	• Integrates ESMP in design and tender documents • Obtains permits • Monitors and reports on environmental performance • Develops and conducts ESMP-related training	Before construction During construction, and operation phase
4	DSC	• Prepares and supports ESMP implementation • Supervises contractors	Pre-construction phase Construction phase (daily, weekly, monthly)

SN	Stakeholder	Roles and Responsibilities	Time Schedule
		• Monitors ESMP compliance and prepares reports • Conducts training and prepares manuals • Monitoring of the effectiveness of enhancement measures and mitigation measures	
6	Contractor - ESHS specialist of the contractor	• Prepares C-ESMP • Appoints EHS officer • Implements and monitors ESMP measures • Maintains records and submits reports • Conducts toolbox training	Pre-construction phase Daily during construction phase.
7	Affected Stakeholders	• Address local grievances • Provide feedback to NITDB/ICP on community matters	As and when required

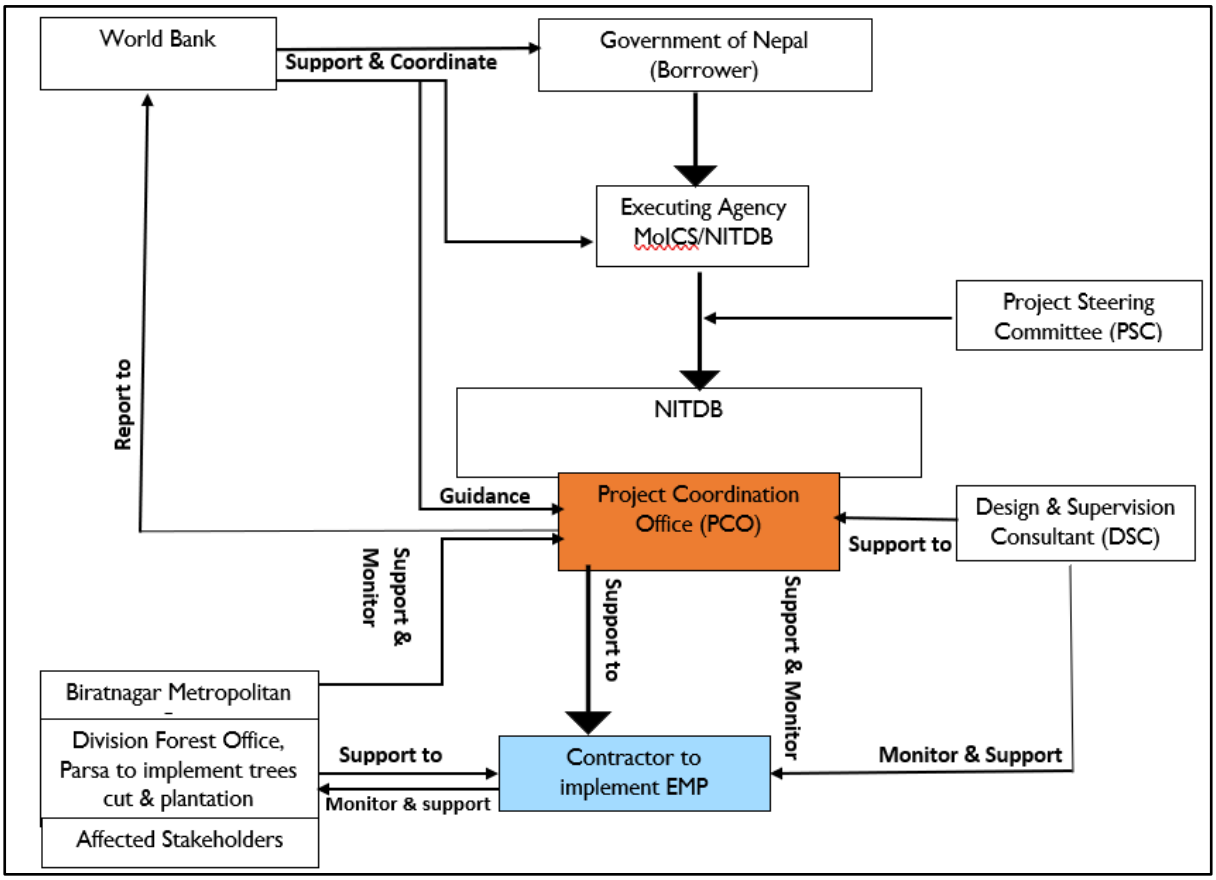


Figure 4.1: ESMP Implementation Mechanism

4.2 Grievance Redressal System

In order to address the incoming grievances (received in person, by phone, text message, email), two level grievance redresses committee will be formed; one at the Subproject level (ICP, Biratnagar) and next at the Central Level (NITDB-PCO). The subprojects Level GRM consist of a subproject Level Grievance Redress Committee (GRC) which constitutes ward

representative. head of NITDB branch Biratnagar, social safeguard expert of CSC and focal person of the contractor. The subproject level GRC will record all the grievances at project site and analyzed the grievances. The focal person assigned by the client will serve for the primary contact for complaints update prior to forwarding them to the GRC. The subproject level GRC will try settling the incoming grievance at site level within a week. If the grievance fails settle at subproject level GRC then the subproject Level GRM forwards the grievance to central level GRM with recommendation for further action to Central Level Grievances Redress Committee (GRC). The central level GRC constitutes the NITDB director, safeguard focal person, safeguard persons of PCO. The safeguard focal person of the NITDB will update the complaints prior to forwarding them to the GRC. The central level GRC will take a decision and inform the complaining party regarding the decision it has made through appropriate channel within fifteen days. The NITDB-PCO may forward the decision to Ministry Level (MoICS) and Boards of NITDB if the complaining party is still unsatisfied. If the complaining party doesn't satisfy with the decision from ministry level decision, they can go to the court of appeal (As per ESMF of SRCTIP, September 2020).

All concerns are filtered to the relevant departments or grievance committees to address the reported matters about the project. The GRM will receive stakeholder complaints and will address all these complaints within a month. The GRM process is depicted in the chart below.

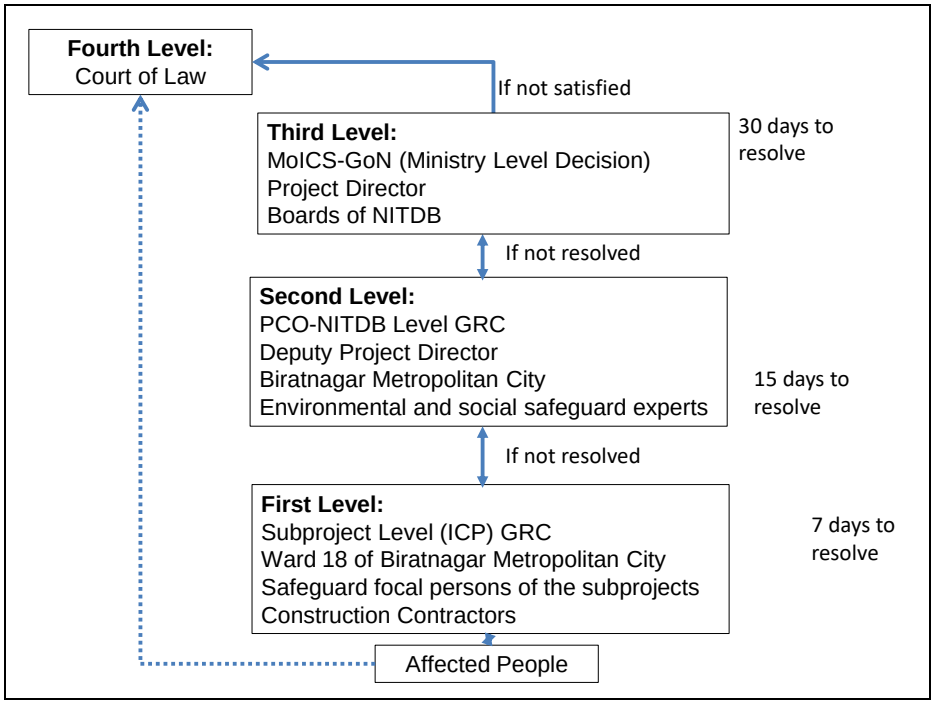


Figure 4.2: Grievance Redress Mechanism

In addition, MoICS (PCO-NITDB) will ensure that the Contractor will setup a separate Grievance Redress Mechanism (GRM) to deal exclusively with those complaints that involve workers employed by the Contractors for construction activities. The environmental and social specialist at PCO will monitor the GRM and implementation of the Contractor's environmental and social risk management commitments.

The complaints data are reported as a part of the regular reporting period. Complaints received during the period must record and maintained in a separate book with the following details:

- Nature and type of complaints,
- Type of communication (written or verbal),
- Date and time of complainant, and
- Name and address of the complainer.

4.3 Stakeholder Consultation and Information Disclosure

A separate Stakeholder Engagement Plan (SEP) will be prepared for the Project, based on the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement.

4.3.1 Stakeholder Consultation

PCO-NITDB will carry out consultations with various stakeholders on the proposed reconstruction activities and take their feedback on design, E&S risks, and mitigation measures. The key stakeholders consulted at various stages during safeguard document preparation and safeguard implementation includes local community, ward representatives, local government and relevant government agencies. Altogether five consultations (with 47 participants) were carried out during the ESMP preparation. In the consultation meetings, the participants were informed about the project, its related activities and the potential positive and negative impacts resulting from project implementation. The feedbacks were to establish GRM, consider dust management, traffic management. If any impacts from the proposed activities occur, the impacts should be mitigated through discussion with concerned stakeholders.

While preparing the draft BES report, a public hearing was also carried out in 6 December, 2024 to inform the stakeholders about the proposal and gather their concerns and suggestions. Drainage improvement to solve water logging in the outside of ICP area, safety measures during construction, water spraying, study of recharge ponds and workers management are the concerned raised during public hearing and consultation meeting.

4.3.2 Information Disclosure

This disclosure enables affected communities and stakeholders to understand potential project impacts and provide feedback. According to the World Bank's Environmental and Social Framework (ESF), disclosure should begin early in the project cycle and continue throughout implementation. It should be done in a language and format suitable to the local context to ensure effective communication and participation.

This ESMP will also be disclosed on the NITDB website and also on the World Bank website. Hardcopies of the ESMP will be made available at the project office and contractor office. Quarterly environmental monitoring reports on the implementation of ESMP will be included into the project overall report and will be shared with the World Bank.

4.4 Contractor's Responsibility for Environmental and Social Compliance

The contractor will prepare and implement a Contractor's Environmental and Social Management Plan (CESMP) based on the project's ESMP. While major risks may need separate plans, issues with low to moderate risks can be included directly in the CESMP instead of

making separate documents. The CESMP should cover key areas such as labour camp management, pollution control, waste and spoil management, health and safety, emergency response, site security, traffic management, training, and complaint handling. It should clearly outline the contractor's responsibilities, including who will do what, when and how activities will be done, how progress will be monitored, and what actions will be taken if requirements are not followed.

4.5 Capacity Building

Capacity building aims to raise awareness and educate the project management team, engineers, supervisors, contractors, and workers on the environmental impacts of the project and their roles in environmental protection. Training will focus on ESMP implementation, corrective actions, monitoring, and reporting.

The contractor, in coordination with NITDB and CSC, will organize training for staff, subcontractors, and key personnel on environmental laws, required approvals, and impact mitigation measures. Special focus will be given to community health, sanitation, occupational health and safety (OHS), labour camp standards, and awareness on SEA/SH and GBV.

4.5.1 For the Implementing Unit (the client, NITDB)

The implementing agency will be oriented on safeguard requirements of GoN and the World Bank, including ESMP monitoring, stakeholder roles, compliance reporting, and the grievance redress mechanism.

4.5.2 For the Contractors

Contractors will be trained on safeguard compliance measures including C-ESMP, OHS plans, labour camp management, training coordination, and grievance redress. Relevant costs are included in the mitigation measures section.

5 MONITORING AND REPORTING

5.1 Monitoring

The main objectives of the environmental monitoring plan are to ensure that the project baseline conditions are adequately documented and the mitigation/enhancement measures are compiled and implemented in time, and with sincerity. Environmental monitoring plans include the activities to be monitored (parameters and indicators), methods, location and responsible agency for monitoring during Pre-construction, Construction and Operation phases. It not only evaluates the effectiveness of the implemented measures to mitigate the impacts but also identifies any unforeseen impacts for further corrective actions to avoid or minimize the impacts before it is too late.

Regular monitoring of ESMP implementation will be conducted by the implementing agency (internal monitoring) as well as by an independent external monitoring and evaluation organization to verify:

- Project activities comply with environmental laws and the impacts do not exceed legal standards;
- Actions and commitments described in the ESMP are implemented fully on time;
- ESMP actions and compensation measures are effective enough to enhance (or at least restore) affected parties and/or environmental components;
- Complaints and grievances lodged by people of project affected area followed up and that where necessary, appropriate corrective actions are implemented; and
- If necessary, changes in ESMP procedure are made to improve delivery of entitlements to people of project affected area.

The primary monitoring responsibility will rest with the NITDB. The client will establish safeguard unit comprising environmental and social safeguard experts to undertake social and environmental monitoring of the project.

5.1.1 Internal

The internal monitoring will be carried out NITDB, PCO, CSC and Contractor on a regular basis to assess progress against the schedule of action defined in the ESMP. Activities to be undertaken by the proponent for ESMP implementation will include;

- Liaison with the ESMP implementation team, construction contractor and project stakeholders to review and report progress against the ESMP;
- Assess the progress on implementation of action and commitment describe in ESMP;
- Verification that agreed measures to restore or enhance affected environmental components are being implemented;
- Assess people of project affected area's satisfaction with environmental and resettlement outcomes through informal village head and household interviews;

- Collect record of grievances, and follow-up to check that appropriate corrective action, if required have been undertaken and that outcome are satisfactory;

5.1.2 External

External monitoring will be conducted during the implementation period to ensure that the project activity comply with the environmental standards and to check the proper implementation of ESMP and grievances are addressed in a prompt manner to resolve the cases. Activities that will be undertaken by the third-party consultants designated by WB/NITDB include:

- Review of internal monitoring procedures and reporting to ascertain whether these are being undertaken in compliance with ESMP;
- Review of internal monitoring record as a basis for identifying any areas of non-compliance, any recurrent problems, or potentially disadvantaged groups or households;
- Review grievances record for evidence of significant non-compliance or recurrent poor performance in resettlement implementation;
- Assess overall compliance with the EMP requirements; and
- Prepare a summary monitoring report for NITDB management, MoFE and financing institute on progress of ESMP implementation, any issue arising and any necessary corrective actions.

5.1.3 Monitoring Plan

To ensure effective implementation of ESMP, PCO, NITDB and Design Supervision Consultants (DSC) will be responsible for undertaking monitoring the project.

Table 5.1 presents methods, schedule, and indicators to be monitored during pre-construction, construction and operation phase.

Table 5-1: Monitoring Plan

Impact/ measures	Monitoring Indicator	Monitoring Location	Monitoring Method	Monitoring Frequency	Monitoring Responsibility	Cost of Monitoring
Pre-construction Stage						
Inclusion of ESMP in tender documents and thereafter into the contractors work plan	Written statement in tender document and construction work plan	In tender document	Review of detailed design, specification, tender documents and construction work plan	Once, before approval of tender document	CSC/NITDB	No cost is required
Contractor ESMP and other plans including OHS and Emergency Preparedness Plan, Stockpile Management, Labour camp standard	Plan and standard	Safeguard document	Review	Once	CSC/NITDB	No cost is required
Prior approval from Division Forest Office	Approval letter	Document	Observation	Once	CSC/NITDB/DFO	No cost is required
Construction phase						
Trees cut, illegal trade of trees, wood logs management	Number of trees cut down, stockpiling of trees logs, coordination with DFO	Site	Observation/Records	During site cleaning	CSC/NITDB/DFO	
Tree/vegetation Loss from site	No of plantation	Site	Observation/records			
Trainings, awareness and orientation to the workers	Training documents, trainee list, documents	Construction sites	Observation and document review	monthly	CSC/ PCO/NITDB	No cost is required
Stockpiling of construction materials	Stockpiling area, barricade in the sites	Stockpiling area	Field visit and site observation	Construction stage	CSC/ PCO/NITDB	
Air Quality	24 hours TSP and PM 10 (to examine impact on ambient air quality in relation to NAAQS standards Dust generation	In and around construction site	As per National Ambient Air Quality Standards, Nepal, 2003	Quarterly	CSC/ PCO/NITDB	160,000 (8 samples- 20,000 per sample) in Civil Work Contract

Impact/ measures	Monitoring Indicator	Monitoring Location	Monitoring Method	Monitoring Frequency	Monitoring Responsibility	Cost of Monitoring
Water Quality	DO, BOD, Turbidity, TDS, TSS, COD, Color, pH, hardness, oil, grease, coliform	Construction site, drinking water	Sample collection and laboratory analysis	Quarterly	CSC/ PCO/NITDB	80,000 (8 samples- 10000 per samples) in Civil Work Contract
Noise quality	Noise level (dBA)	Construction site, nearby settlements	Sound level meter	Monthly	CSC/ PCO/NITDB	120,000 samples (24 samples- 5000 per sample) in Civil Work Contract
Dust emission	Visual inspections, Frequency of water spraying	Construction site, roads	Site observation/ Water spray record	Daily	CSC/ PCO/NITDB	
Health and sanitation	Common disease, Practice of sanitation (solid waste disposal), source of water and its quality	Project surrounding settlements	Field survey and documentation, Photographs	Monthly	CSC/ PCO/NITDB	
Labour Camp	Compliance with Labour Camp Standard	Labour Camp	Observation/Photographs	Weekly	CSC/ PCO/NITDB	Labour camp establishment will be included in contractor responsibility
Occupational Health, Accident, Injury,	Following OHS plan, Use of PPEs, Provision of first Aid Box	Construction sites/labour camp	Observation	Monthly by CSC, daily by contractor	CSC/ PCO/NITDB	Not required

Impact/ measures	Monitoring Indicator	Monitoring Location	Monitoring Method	Monitoring Frequency	Monitoring Responsibility	Cost of Monitoring
Waste generation	Waste management system, number of marked bins, waste around the sites	Construction sites and labor camp	Observation/Photographs/ Record Keeping	Biweekly	CSC/ PCO/NITDB	
Impacts from Stockpiling of Construction Materials	Location of Stockpile Sites, (Nearest distance of residential house/sensitive area) Land use permission	Site	Observation	Daily	CSC/ PCO/NITDB	
Traffic Issues	Vehicle counts/no of vehicles per day Accident record	Road	Site observation Public consultation	Daily	CSC/ PCO/NITDB	
Health and Safety Issues	Number of reported incidents PPE compliance rate Nb of training sessions conducted	Construction Site, labour camp	Site observation Records/Photographs	Daily	CSC/ PCO/NITDB	
Unequal wages to Male and Female	Salary slips/record of receipt	Construction Office/site	Interview/Grievance from employee	Monthly	CSC/ PCO/NITDB	
Child Labour	Age verification documents/Observation	Construction workers	Interview/Verification documents	Monthly	CSC/ PCO/NITDB	
Disadvantaged groups	Employment, economic status, social status, education	Project affected Wards	Social survey and discussion with targeted group	Once a year	DSC/ PCO/NITDB	
GBV (SEA/SH) prevention and response measures	Signed codes of conduct; IEC materials displayed; training and sensitization reports; number of GBV-	Labour camps, construction sites, community areas	Field observation, document review, stakeholder interviews	Monthly and as needed	DSC/ PCO/NITDB	Included in safeguard training and awareness budget

Impact/ measures	Monitoring Indicator	Monitoring Location	Monitoring Method	Monitoring Frequency	Monitoring Responsibility	Cost of Monitoring
	related complaints; presence of referral pathways					
All workers have formal employment contracts with clear terms and conditions	Copies of signed employment contracts	Contractor's office / labour camp	Document review and worker interviews	Monthly	Contractor, monitored by DSC/PCO	Included in supervision cost
Entry of unauthorized person to the sensitive area and to the construction sites	Provision of guard, signage and barricade in the sites	Construction sites	Observation, Visitors' entry register	Daily	Contractor/DSC/NITDB	
Monitoring of impacts and mitigation measures as per ESMP		Construction sites		Monthly	CSC /NITDB	
Conflicts/Grievances	Grievances registered in the site, GRM resolved Feedback from community	Construction sites	Document review and Grievance Record Book	Monthly	CSC /NITDB	
Operation Phase						
Objective of the infrastructures	Observation, Management system	Construction sites	Observation, Visitors' entry register	Daily	NITDB/Operator	
Adopting code of practice for waste management	Environment code of practice in the area	Construction sites	Observation, Visitors' entry register	Daily	NITDB/Operator	
Taking care of planted trees	Trees growth/survival	Construction sites	Observation, Visitors' entry register	Daily	NITDB/Operator	

5.2 Reporting

The safeguard experts of both CSC and PCO monitors the compliance status of ESMP and makes necessary recommendation and compiles them to incorporate in quarterly, semi-annual report as per requirement. The contractor will prepare monthly progress report of the construction work including monthly ESMP's compliance report inclusive of health and safety report and submit to the project. The client in support with CSC is responsible for the preparation of semiannual safeguard monitoring report and the submission to the WB.

6 BUDGET

The Environment, Health, and Safety requirements of the construction contractor shall be clearly spelled out in the contract document and the necessary cost will be included in the BOQ. As all the ESMP costs and activities are included in the BoQ, the budgetary activities lie within the contractor's responsibility. Besides budgetary work, the contractor is responsible for the contractor's commitment plan as in ESMP.

The cost of executing the suggested mitigation measures such as spoil management, stockpiling of the construction material, labour camp establishment shall be included in contractor's environmental and social plans, whereas the tree plantation, tree cut and wood logs management, provision of PPE, awareness on OHS, SEA/SH, GBV and monitoring of air, noise, water come under the BoQ. These estimates cover the basic monitoring activities and the mitigation measures to be complied from the contractor's side. The Total ESMP cost estimated for this project is NRs 28,00,000.00 (Twenty-Eight Lakh Nepalese Rupees only) excluding VAT.

Table 6-1: Cost for ESMP implementation and monitoring

SN	Activities	Total Cost for ICP		Remarks
		ESMP	BoQ	
1. Environment and Social Mitigation activities (Pre construction phase)				
1.1	Establishing labour camp with project information, hoarding board and signage, barricade		20,00,000	The contractor should include in their CSEMP
1.2	EMP implementation training	100,000		The Environment and Social Experts of CSC and PCO will be mobilized.
1.3	Site Security Provision with CCTV	100,000		CCTV in coordination wards/ICP
2. Construction Mitigation Activities				
2.1	Coordination with ward office for employment and skill enhancement			Cost is included in the Link Road ESMP
2.2	Specific activities related to mitigations such as GBV (SEA/SH), child trafficking, HIV/AIDs awareness, gender and social empowerment	100,000		Social awareness program to the workers and community by CSC and PCO.
2.3	EHS Awareness raising and Health and Safety training to project staff and contractor workers. Provision of First Aid box with replenish Health Screening	100,000 50,000		Health screening is included in Road

2.4	Skill enhancement trainings to the labour			Skill enhancement training included in road project
2,5	Provision of PPE to the workers	50,000		
2,6	Strengthening existing waste management system	250,000	-	
2.7	Drainage management			This is included in culverts construction in the link road
2.8	Traffic Management	50,000		For coordination during high flow in the ICP gate.
2.9	Dust Management by water spraying	100,000		NRs 450,000 amount is also allocated in road ESMP, it is for the ICP gate
2.10	Environment Monitoring and Management Unit		-	The cost for construction stage monitoring is included in the DSC and operation stage monitoring by NITDB
2.11	Plantation of 100 trees	50,000		Included in BoQ Plantation 100 trees @ NRs. 500/plant-50000
2.12	Community Support Program	10,00,000		NRs. 30,00,000 is Included in Road
Environmental Monitoring Cost				
3.1	Quarry Sites monitoring and material quality check up			Visit by NITDB/PCO/DSC, no cost is required
3.2	Air Sampling	60,000		3 samples (single site in semiannual basis for 1.5 years, 20,000/Sample)
3.3	Noise measurement and management	30,000		6 samples (single site in quartely basis for 1.5 years, 5,000/Sample)
3.4	Water quality test	60,000		6 samples (1 site in quarterly basis for 1.5 years @ 10,000/Sample
	Total	21,00,000	20,00,000	Excluding Vat

Note:

- *The project is located in ward 18 and the Link Road Improvement is located in ward 14, 17 and 18*
- *As all the concerns raised during public hearing/public consultation/recommendations/suggestions are related to the road improvement, the cost of the few measures is provided in the ESMP of Link Road Improvement.*

PHOTOGRAPHS

Public consultation

Public consultation

Public consultation

Public consultation

Public consultation

Draft Notice pasting

Public Hearing